DOCUMENT RESUME

ED 071 337 EM 010 482

AUTHOR	Shrage, Jules H.; And Others
TITLE	Introduction to Psychology and Leadership. Specifications of Research Test Items.
INSTITUTION	Naval Academy, Annapolis, Md.; Westinghouse Learning Corp., Annapolis, Md.
SPONS AGENCY	National Center for Educational Research and Development (DHEW/OE), Washington, D.C.
REPORT NO	TP-6-9
BUREAU NO	BR-8-0448
PUB DATE	Dec 69
CONTRACT	N00600-68-C-1525
NOTE	7p.; See also EM 010 418 and EM 010 419
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	*Autoinstructional Aids; Curriculum Design; *Curriculum Development; Individualized Curriculum; Individualized Instruction; Individual Psychology; Instructional Design; Leadership; *Leadership Training; Management Education; Military Training; Multimedia Instruction; Performance Criteria; Psychology; Social Psychology; Technical Reports; *Test Construction; *Tests

ABSTRACT

The working guidelines for the development of research test items for the cumulative post-tests of the United States Naval Academy's leadership course developed by the Westinghouse Learning Corporation are presented in this report, including general specifications, content analysis and test construction, and classification of items. EM 010 418 through EM 010 447 and EM 010 451 through EM 010 512 are related documents, with the final report appearing under EM 010 418, EM 010 419, and EM 010 484. (Author/RH)

ED 071337

FILMED FROM BEST AVAILABLE COPY

Westinghouse Learning Corporation

SPECIFICATIONS OF RESEARCH TEST ITEMS

TP 6.5 December 9, 1969

EM 010 482

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY

ED 071337

TP - 6.9

December 9, 1969

LEADERSHIP MANAGEMENT COURSE

SPECIFICATIONS OF RESEARCH TEST ITEMS

CONTRACT NO. N00600-68-C-1525

ABSTRACT

This paper represents Westinghouse Learning Corporation's working guidelines for the development of research test items for the Cumulative Post-Tests of the USNA Multi-Media Course Development Project.

Prepared by:

Jules H. Shrage
with
Dr. Edwina Hubert
Dr. David Bessemer
Dr. Douglas Ferraro
Dr. John Giblette

Approved by:

Project Manager
Leadership Course

WESTINGHOUSE LEARNING CORPORATION

2083 WEST STREET

ANNAPOLIS, MARYLAND 21401

SPECIFICATIONS OF RESEARCH TEST ITEMS

A. General specifications

1. Relationship of items to content: Cumulative Post-Test (CPT) items will be prepared on the basis of content outlines and the content of "common" instructional materials (i.e., materials presented in each of the parallel experimental modules).

   Each CPT item must have an identifiable relationship to one or more general and/or specific headings of the content outlines; references to content outline headings will be noted on each test item submission form.

   Each item will be related to the content of as many different segments making up the Cumulative Post-Test Unit as is feasible and desirable in relation to other specifications detailed below. The entire set of items should represent an equitable distribution of content among segments of the Unit in relation to the relative amount of content covered by the outlines and the materials of each segment.

2. Number of items per Unit: The number of items to be developed for each CPT Unit will equal ten (10) times the number of segments making up the Unit.

3. Item difficulty: CPT items will possess high discriminative power; WLC will endeavor to construct items of relatively high initial difficulty and sensitivity to gain, using the general guideline that not more than 40% of the students should answer the item correctly on a pre-test, nor less than 50% of the students should answer the item correctly on a Post-Test. Actual indices of item difficulty will be determined in the validation testing program at the USNA, as a basis

for subsequent item revision.

4. Format of items: CPT items will be developed in a final multiple-choice format; the student will be required to select the one correct or most appropriate answer from among four possible alternatives.

5. Types of items: CPTs will include items which represent "acquisition of knowledge" (Type I items) and "application of knowledge" (Type II items).

   Type I items will measure acquisition of specific factual information covered in one or more segments of a Unit. Acceptable forms of Type I items include definition-identification, discrimination-comparison, multiple discrimination, and concept identification questions.

   Type II items will measure application of concepts and principles covered in one or more segments of a Unit. Acceptable forms of Type II items include problem identification (selection of the correct or most appropriate example or illustration of a given concept or principle) and problem solving (selection of the correct or most appropriate solution of a given problem). Each CPT will contain approximately equal numbers of Type I and Type II test items.

6. Length of items: CPT items will be concise; they will contain only essential details.

   As a specific guideline, each CPT item will be constructed so that a USNA midshipman may reasonably be expected to read, understand, and respond to the item within one minute.

B. Content Analysis and Item Construction

1. Analysis of content: The CPT should measure acquisition and application of content within segments, and also the ability to integrate and utilize material presented in several segments of the Unit.

Construction of a CPT will therefore depend upon an analysis of Unit content.

WLC will examine all terms, concepts, and principles contained in the Unit, together with their associated definitions, descriptions, purposes, advantages, disadvantages, and/or uses.

Groups of terms, concepts, principles etc., which have similar and/or potentially confusable elements will be identified. Test items can then be constructed which measure, in a multiple-choice format, the ability to identify, discriminate between, compare, and apply in problem situations, elements of the Unit content.

Other relationships among terms, concepts, principles, etc., of the Unit will also be examined, so that test items can be constructed which measure, in a multiple-choice format, the ability to generalize from, integrate, and apply material presented in the Unit.

C. Classification of items

1. Type I items (acquisition of knowledge)

a. Definition-identification: Item will require selection of the correct definition, description, purpose, or use of a given term, concept, or principle;

or:

Item will require selection of the correct term, concept, or principle which is defined or described by a given definition or description.

b. Discrimination-comparison: Item will require selection of the correct distinction between or comparison of a given set of terms, concepts, and/or principles;

or:

Item will require the correct matching of a set of terms, con-

cepts, and/or principles with a set of definitions and/or descriptions, as:

Which matching of words and statements is correct?

1. Term 1	A. Definition 1
2. Term 2	B. Definition 2
3. Term 3	C. Definition 3
4. Term 4	D. Definition 4

(possible answers, one of which is correct):

a) 1-B, 2-D, 3-B
b) 1-D, 2-B, 3-A
c) 1-D, 2-B, 3-C
d) 1-C, 2-D, 3-A

2. Type II items (application of knowledge)

a. Generalization-problem identification: Item will require selection of the correct or most appropriate "real-life" application, example or illustration of a given concept or principle;

or:

Item will require selection of the correct concept or principle illustrated by a given "real-life" example or illustration.

or:

Item will require correct matching of a set of concepts and/or principles with a set of "real-life" examples and/or illustrations.

b. Problem solving: Item will require selection of the correct or most appropriate solution of, resolution of, or reaction to a given "real-life" problem or situation;

or:

Item will require correct matching of a set of concepts and/or principles with a set of solutions of, resolutions of, and/or

reaction to a given "real-life" problem or situation (i.e., how would alternative theories, methods, or approaches deal with the same situation or problem).